

### **REMARKS**

Applicants submit this paper in response to the non-final Office action dated October 19, 2009, wherein (a) claims 1, 2, 4, and 7-17 are pending in the application, (b) claims 7-12 were withdrawn in response to a restriction requirement, (c) claims 1, 2, 6, 13, and 15 stand rejected under 35 U.S.C. § 103(a) as assertedly obvious over U.S. Patent No. 4,393,106 (“Maruhashi”) in view of U.S. Patent No. 4,181,239 (“Heiremans”), U.S. Patent No. 4,534,995 (“Pocock”), U.S. Patent No. 6,613,394 (“Kuckertz”), U.S. Patent No. 5,071,906 (“Tanaka”), U.S. Patent No. 5,474,610 (“Jorgens”), and U.S. Patent Publication No. 2002/0169493 (“Widenhouse”), (d) claims 4 and 14 stand rejected under 35 U.S.C. § 103(a) as assertedly obvious over Maruhashi in view of Heiremans, Pocock, Kuckertz, Tanaka, Jorgens, and further in view of U.S. Patent No. 6,017,577 (“Hostettler”) as evidenced by The Journal of Oil Chemists’ Society, Vol. 34, No. 12, p. 610-11 (1957) (“Rao”), and (e) claims 16 and 17 stand rejected under 35 U.S.C. § 103(a) as assertedly obvious over Maruhashi in view of Heiremans and Pocock and further in view of Hostettler as evidenced by Rao.

In light of the present claims and the following remarks, Applicants believe that the present application is in condition for allowance and respectfully request the Office to acknowledge the same.

#### **Rejection Under 35 U.S.C. § 103**

Independent claims 1 and 16 are amended for clarity. Amended claim 1 recites, in relevant part, a method for manufacturing hollow bodies made of PET with a gas barrier coating with a coating agent including a polyvinyl alcohol base that includes coating the hollow body by swelling it with a polyvinyl alcohol coating agent. Similarly, independent claim 16 is amended to recite a method for manufacturing hollow bodies with a gas barrier coating with a coating agent having a polyvinyl alcohol base, where a surface of a hollow body to be treated is subjected to a preliminary treatment to increase surface energy, coated with a polyvinyl alcohol coating agent and then dried.

As recognized in the Office action, Maruhashi fails to disclose or suggest coating a hollow body with a coating agent comprising polyvinyl alcohol. Therefore, the Office action cites Heiremans as disclosing a polyvinyl alcohol gas barrier coating, and asserts that it would have been obvious to modify the coating of Maruhashi to include the polyvinyl alcohol

of Heiremans to arrive at the claimed invention. The suggestion or motivation set forth in the Office action for making such a modification is to improve the barrier properties or to use thinner films. Contrary to this assertion, however, the applicants respectfully submit that there is no proper suggestion or motivation to modify the teachings of Maruhashi to include a polyvinyl alcohol coating because doing so would render Maruhashi inoperable for its intended purpose and change its principle of operation, each of which render any obviousness formulation improper under MPEP §2143.

For example, Maruhashi discloses a very particular barrier composition, an intended purpose of which is to operate in a manner that remarkably reduces the humidity dependency of the oxygen barrier. In particular, Maruhashi discloses that “[t]he copolymer that is used for the coating layer in the present invention comprises as *indispensable components* 99 to 70% by weight, preferably 96 to 75% by weight, of vinylidene chloride and 1 to 30% by weight, preferably 4 to 25% by weight of at least one acrylic or methacrylic monomer, and as an optional component, other ethylenically unsaturated monomer in an amount of up to 100 parts by weight per 100 parts by weight of the total amount of said two indispensable monomers.” *See* Maruhashi, col. 4, lines 10-18 (emphasis added). As illustrated in the data shown in Table 1, the specific copolymers used in the Maruhashi method (VdC/AN and (VdC/AN):St in Table 1) have an oxygen permeability coefficient at a relative humidity of 100% that is not substantially different from the oxygen permeability coefficient at a relative humidity of 0%. *See also* Maruhashi at col. 6, lines 41-44 (disclosing that Table 1 includes the oxygen permeability coefficients and water vapor permeability coefficients of resins customarily used for molding of bottles and the copolymers that are used in the present invention). Maruhashi continues to explain that “from the data shown in Table 1, it will readily be understood that in the copolymer that is used in the present invention, the oxygen permeability coefficient at a relative humidity of 100% is not substantially different from the oxygen permeability coefficient at a relative humidity of 0%, that is, the humidity dependency of the oxygen permeability coefficient is substantially zero.” Maruhashi, col. 7, lines 30-38. Therefore, as mentioned, the reduced humidity dependency of the oxygen barrier is an important focus and intended purpose of the Maruhashi barrier coating.

The applicants submit that a polyvinyl alcohol barrier coating would not exhibit an oxygen permeability coefficient with the same significantly reduced humidity dependence as

that intended by Maruhashi. Therefore, modifying Maruhashi to include a polyvinyl alcohol barrier coating, as suggested by the Office action, would destroy the functionality of Maruhashi, thereby rendering the obviousness formulation improper. In fact, “[c]onventional PVOH coatings are known to exhibit reduced oxygen barrier properties as relative humidity increases, typically at greater than about 60% relative humidity, with oxygen transmission rates increasing steeply as relative humidity increases . . . .” *See* U.S. Patent No. 6709,735 at col. 4, lines 33-34. For this reason, the Heiremans method includes, as an indispensable element, the use of a plurality of layers of an organic thermoplastic binder (element (c)) to provide a humidity-tight barrier for the barrier coating (element (a)). *See* Heiremans, col. 4, lines 59-68, to col. 5, line 1, *see also* col. 6, lines 37-40 (describing elements (a), (b), and (c) as “essential, indispensable elements” for the construction of the cylindrical body of the container).

For the foregoing reasons, it is submitted that one of ordinary skill in the art would not have been motivated to modify the barrier coating of the Maruhashi method with the teachings of Heiremans or any other reference disclosing the use of a polyvinyl alcohol barrier coating and, therefore, it is improper to combine Maruhashi with Heiremans or any other reference teaching a polyvinyl alcohol barrier coating. Accordingly, a *prima facie* case of obviousness cannot be based in whole or in part on Maruhashi.

As evidenced by the Office action’s use of Maruhashi as the primary reference, none of the remaining references or proper combinations thereof discloses or suggests each and every limitation as recited in independent claims 1 and 16. Accordingly, claims 1 and 16, and the claims depending therefrom, are allowable over the cited references. In view of the foregoing, reconsideration and withdrawal of the rejections are respectfully requested.

#### CONCLUSION

Applicants believe that each of the outstanding rejections, objections and/or other concerns have either been accommodated, traversed or rendered moot. Therefore, the application is considered in condition for allowance. Should there be any outstanding issue

that the Office believes may be remedied via telephone conference, please contact the undersigned at (312) 474-6300.

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Respectfully submitted,

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